Institut für Geometrie und Topologie

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Generalizing fatness and positive curvature

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Raum 7.530

Abstract:
Alan Weinstein, introduced the concept of "fat bundle" as a tool to understand when the total space of a fiber bundle with totally geodesic fibers allows a metric with positive sectional curvature.

In recent times, certain weaker notions than the condition of having a metric with positive sectional curvature have been studied due to the apparent scarcity of spaces that meet this condition. Positive kth-intermediate Ricci curvature (Rick > 0) on a Riemannian manifold Mn is a condition that bridges the gap between positive sectional curvature and positive Ricci curvature. Indeed, when k = 1, this condition corresponds to positive sectional curvature, and when k = n−1, it corresponds to positive Ricci curvature.

In this talk, I will discuss an ongoing project with Miguel Domínguez Vázquez, David González-Álvaro, and Jason DeVito, which aims to create new examples of compact Riemannian manifolds with Ric2 > 0. We achieve this by employing a certain generalisation of the "fat bundle" concept.

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